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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,426	02/21/2001	Masahiro Katoh	P 277197 55444-US-SUS	5254

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EXAMINER

WAKS, JOSEPH

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 04/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/788,426

Applicant(s)

KATOH ET AL.

Examiner

Joseph Waks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Specification*

2. The incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claims 1-8** are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The novelty and the use of the combination of a high-conduction member and a low-conductivity element in the brush are not disclosed. Moreover the indefinite claim

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language, as indicated below in the rejection under the second paragraph, makes the disclosure even more obscure.

5. **Claims 1-8** are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not address the benefit and the purpose of the disclosed structure. The indefinite claim and specification language makes it unclear if the combination of materials addresses the electrical or thermal conductivity and the definition of the high and low conduction is completely omitted in the specification. Therefore, one skilled in the art would not be able to make or use the invention.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claims 1-8** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 6, and claim 2, lines 6 and 7, "a high-conduction member", line 8, "a low-conduction member", and line 13, "thin layer" are indefinite since it is not clear if the indicated conduction is an electrical or thermal conduction, the high or low conduction are relative terms that render the claims indefinite since the specification does not quantify the required range and the direction for the prescribed conduction and the resulting claims do not clearly set forth the metes and bounds of the patent protection desired.

In claim 2, last line, "3." is a typographic error.

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In claim 3, line 4, "a commutator" should be --said commutator--.

In claim 5, line 3, "said high-conduction powder" lacks antecedent basis, line 4 "lower step" should be --a lower step--.

In claim 6, lines 3-4, "said high-conduction powder" lacks antecedent basis.

In claim 7, lines 2-3, "said high-conduction powder" lacks antecedent basis.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 1, 2, and 5-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Baroin (FR 2 339 263)** in view of **Hoffmann et al. (WO 90/07211)**.

**Baroin** discloses a carbon brush comprising a brush element having a contact surface and an end to be in contact with a commutator, a high conduction element 1, a low conduction element in a form of a thin layer 3 (Re page 2, lines 30-40) bounded to a side of the high-conduction member, a pigtail 2 having a wire end fully embedded in the high conduction member. However, **Baroin** does not disclose the layer of the low-conduction member extending to the middle of the length of the brush element.

**Hoffmann et al.** discloses a collector shoe (or a brush element) having a high conduction element 1, a low conduction element in a form of a thin layer 10 and lead conductor 4 extending from the side of the collector partially covered by the low conduction element for the purpose of

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providing a structure where the resistance between the electrical lead and the high conduction element is not affected by the low conduction layer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the brush as taught by **Baroin** and to provide the low-conduction member extending to the part of the length of the brush element as taught by **Hoffmann et al.** for the purpose of accommodating a pigtail extending from the side of the collector covered by the low conduction element where the resistance between the pigtail and the high conduction element is not affected by the low conduction layer.

The commutator is inherent to the disclosed rotary electric machine utilizing carbon brushes.

Re claims 5 -8, the combined brush includes the high conduction element having two steps. The method of forming the high conduction and low conduction elements is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

10. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Baroin (FR 2 339 263)** in view of **Hoffmann et al. (WO 90/07211)** as applied to claim 1 above and further in view of **Niimi (US 5,744,889)**.

The combined brush discloses all elements essentially as claimed. However, it does not disclose the brush being applied to a rotary machine having a pair of positive and a pair of negative brushes.

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**Niimi** discloses a high-speed electric machine having a pair of positive and a pair of negative brushes 12 E and 12F for the purpose of supplying the machine used an engine starter from a DC source.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined brush to be applied to a rotary machine having a pair of positive and a pair of negative brushes as taught by **Niimi** for the purpose of supplying the machine used an engine starter from a DC source.

11. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Baroin (FR 2 339 263)** in view of **Hoffmann et al. (WO 90/07211)** as applied to claim 1 above and further in view **Kammerer et al. (5,701,046)**.

The combined brush discloses all elements essentially as claimed. However, it does not disclose the brush having a boundary layer of mixture of powders of the low and high-conduction members.

**Kammerer et al.** disclose in Figures 6 and 6a a brush 1 having blocks 1B and 1C made of different powders and a third layer 1BC in which the two powders are mixed for the purpose of providing a defined and thin junction layer thus improving the bounding of the two different layers while simplifying the production process and reducing the solid waste.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined brush and to provide the brush layers made of two different powders and the boundary layer of mixture of powders as taught by **Kammerer et al.** for the purpose of providing a defined and thin junction layer, thus improving the bounding of the two different layers while simplifying the production process and reducing the solid waste.

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***Prior Art***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Communication***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (703) 308-1676. The examiner can normally be reached on Monday through Thursday 8 am to 5 pm.

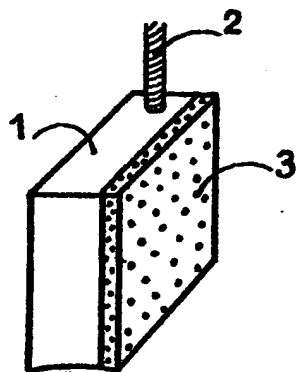
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

  
JOSEPH WAKS  
PRIMARY PATENT EXAMINER  
TC-2800

JW  
March 29, 2002





*contact surface*

Fig. 1

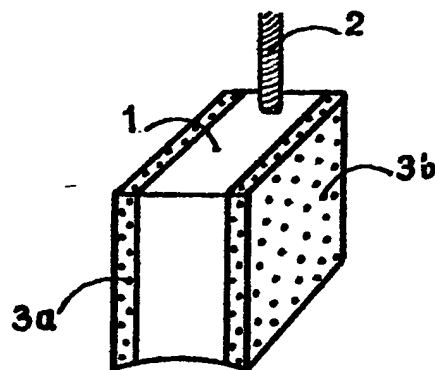


Fig. 2

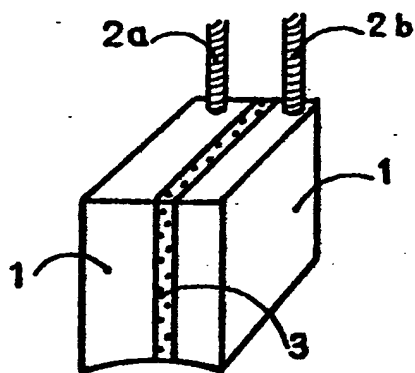


Fig 3

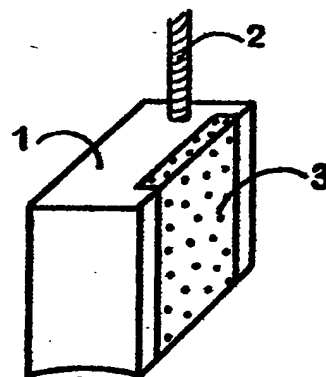


Fig. 4